

PROCEEDINGS
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DESCRIPTIONS OF THE NEWFOUNDLAND OTTER
AND RED FOX.

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The following descriptions of the otter and the red fox of Newfoundland are based on material collected by Ernest Doane, now in the Bangs collection. Of the otter, he has sent a fine pair of adult skins with skulls, and two extra skulls; of the fox, six skins with skulls, and nine extra skulls. In addition to these I have examined a large series of unsexed otter skulls from Newfoundland in the Museum of Comparative Zoology at Cambridge.

Lutra degener sp. nov.

Type from Bay St. George, Newfoundland, No. 6965, ♂ young adult, Coll. of E. A. & O. Bangs. Collected April 23, 1897, by Ernest Doane.

General characters.—Size small, tail short, skull small and weak, with very light zygoma and narrow frontal and rostral regions.

Color.—Deep, lustrous seal brown to black all over, except cheeks, upper lips, chin, and under side of neck, which are grizzled brown, palest on cheeks; under fur light grayish brown at base and gradually darkening to deep rich brown at tips.

Cranial characters.—Skull as compared with that of *L. hudsonica* small and weak; whole frontal and rostral region narrow; postorbital processes long and slender; distance from last upper molar tooth to end of pterygoid process short; zygoma short and very slender; audital bullæ small; dentition normal.

Measurements.—♂ young adult (type); total length 998; tail vertebræ 358; hind foot 126. ♀ old adult, (topotype) No. 6966. Total length 990; tail vertebræ 352; hind foot 109.

Skull, ♂ young adult, (type); basal length 94.6; zygomatic breadth 66.8; mastoid breadth 60; interorbital constriction 22.2; greatest con-

striction behind postorbital processes 18.8; distance across postorbital process 32.4; last upper molar to end of pterygoid process 26; foramen magnum to end of palate 46.4; greatest length of single half of mandible 63.2.

♀ old adult (topotype) No. 6966; basal length 95.4; zygomatic breadth 70; mastoid breadth 63; interorbital constriction 22.8; greatest constriction behind postorbital processes 19.4; distance across postorbital process 33.6; last upper molar to end of pterygoid process 26.8; foramen magnum to end of palate 46.6; greatest length of single half of mandible 65.8.

Remarks.—The characters that separate *Lutra hudsonica* and *Lutra degener* are constant and well marked so far as my series goes. I have fine skins and skulls of *L. hudsonica* from Nova Scotia, New Brunswick, Maine, Massachusetts, and Connecticut, but unfortunately have seen but one skull, an imperfect one, from Labrador, though otter are common there.

I believe the Newfoundland otter is an island species, though I cannot be sure of this; possibly it occurs also in Labrador, as otter might easily swim the distance that separates Newfoundland from the continent if they so chose.

Henry Reeks, however, says of the Newfoundland otter:* “Both traders and settlers make two varieties or species (?) of the Newfoundland otters: one, which is called the ‘country otter,’ and principally frequents inland brooks and rivers, has the fur of a beautiful shining dark liver-brown, almost black on the back, while the other variety, called the ‘salt-water’ otter, is said (for I was unfortunate in not getting a specimen) to have the fur of a rusty brown color and to be considerably larger than the ‘country otter,’ although the skin is not nearly so valuable, rarely realizing more than three or four dollars, whereas good skins of the smaller and darker variety fetch from five to seven dollars.”

Perhaps the ‘salt-water’ otter may be true *L. hudsonica* that occasionally visits the shores of Newfoundland and does not intermingle with the resident form there, *L. degener*.

Vulpes deletrix sp. nov.

Type from Bay St. George, Newfoundland. No. 6967, ♀ middle-aged adult, coll. of E. A. and O. Bangs. Collected April 24, 1897, by Ernest Doane.

General characters.—Size rather small; tail short; hind foot very large; feet and hands densely hairy beneath and armed with extremely long and stout claws; ears large, very woolly, and rounder than the ears of *V. pennsylvanica*. Color very variable; in ‘red phase’ pale ocher yellow (like the prairie fox). Skull but slightly different from that of *V. pennsylvanica*; dentition very strong, the carnassial tooth in particular being very large.

* Zoölogist, March, 1870, page 2037.

*Color.**—Type in 'red phase.' Pelage extremely long and loose. Upper parts pale ocher yellow, to straw color, becoming darker and more rusty on inside of flanks, about shoulder, and on sides of face. Under parts dull white, including a narrow border to upper lip, the color of the upper parts extending down over sides and nearly meeting across middle of belly; chin dull brown; feet and hands black above as far as ankles and wrists, dull brownish yellow below, and densely haired with long loose hair, entirely obscuring the pads.

Tail short, pale, dull yellow with white tip, and irregularly overlaid in places with black tipped hairs; ears large and more rounded than in *V. pennsylvanica*, very thickly covered with woolly hairs, dull black above, yellowish white inside, and yellow at base. Under fur dull yellowish gray at base and yellow at tips, darker on flanks, rump, and under side of neck, and paler on back, shoulders, and belly.

No. 1178, ♀ very old; is a fine silver gray, being black all over except the back, which is beautifully variegated with silvery hairs. No. 6969, ♀ young adult, is a patch fox, being dark reddish brown all over, including tail, legs, and arms, except sides, top of head, parts of middle of back, and base of tail, where it has some yellow hairs intermixed. No. 6968, old nursing ♀, is about intermediate in color between the type and No. 6969, but has base of tail, inside of flanks, and region about fore shoulders a bright orange ochraceous. It is in worn pelage, with much of the long hair gone. A young, about one-third grown, No. 1180, is uniform deep black all over, tip of tail white, and a young, about one-half grown, No. 1179, is dull brownish ferruginous, with much black on legs, arms, tail, and under parts.

Cranial characters.—The skull differs but little from that of typical *Vulpes pennsylvanica*, except in being slightly wider and heavier and in having the whole rostral portion rather heavier and the audital bullæ constantly though slightly larger. The dentition is very much heavier throughout, the carnassial teeth in particular being very large and strong.

Measurements.—Type, ♀ middle-aged adult. Total length 959; tail vertebræ 336; hind foot 161; ear from notch 79. Average of four adult females: total length 958.5; tail vertebræ 342.5; hind foot 158; ear from notch 78.

Skull.—Type, ♀ middle-aged adult. Basal length 123.4; zygomatic breadth 72; mastoid breadth 47; least interorbital width 26.2; greatest length of single half of mandible 99.8. No. 6968, ♀ old adult topotype. Basal length 123; zygomatic breadth 72.8; mastoid breadth 46; least interorbital width 26.6; greatest length of single half of mandible 99.6. ♂ young adult topotype. Basal length 127.2; zygomatic breadth 70.2; mastoid breadth 46; least interorbital width 26; greatest length of single half of mandible 101.4.

*All red foxes are somewhat brighter and more ferruginous in their fresh autumnal coats than they are in the spring. The hairs seem to become rather lighter and more yellowish as the tips wear off. This difference is slight, however, and even in full autumnal pelage the 'red phase' of the Newfoundland fox must be very pale.

Remarks.—The Newfoundland fox is easily distinguished from either typical *V. pennsylvanica* or *V. pennsylvanica rubricosa* by its very large hind foot, with long strong toes and tremendous claws. No. 1178, a very old ♀, taken June 9, 1894, at Codroy, is in worn summer pelage, and the long hairs on the under sides of the feet have worn down so that one pad on each foot can be seen. The long toes and heavy long claws are brought into great prominence, and make indeed a singular foot for a fox. As regards size and proportions, it needs no comparison with either *V. pennsylvanica* or the large, long-tailed, dark red form of Nova Scotia, *V. pennsylvanicus rubricosa*.

In color, the type and only specimen I have in the red phase (which I suppose to be normal) nearly matches many skins of the light yellow fox* of the northern prairies, from which form *V. deletrix* can be distinguished by much shorter tail, smaller size, proportionately larger foot, and heavy claws.

Vulpes deletrix is probably an island form, although there are occasionally times when it might cross from the mainland of Labrador to Newfoundland, or *vice versa*, on the ice; and as foxes do not hesitate to travel such distances on the open ice, it would not be surprising to find this form existing also in Labrador.

* Whether the yellow fox of the northern and central prairies is identical with *Vulpes macroura*, which Baird originally described from a specimen from Great Salt Lake, Utah, is doubtful, although Baird himself, in 1857, included many specimens of the yellow form from Nebraska, Oregon, and Wyoming under that specific name. *Vulpes macroura* has also been applied to the yellow prairie fox by both Dr. Allen and Dr. Merriam, when either has had occasion recently to mention this animal.